

Marine data archeology: A heritage for future science

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Digitization of historical data is crucial to fill spatial and temporal gaps in datasets that are currently available to science. These datasets can give researchers new insights in the underlying processes that control the functioning of our ecosystems. Within the LifeWatch project a data archeology strategy was developed to identify, prioritize, digitize, quality control the data, and eventually to publish the dataset.

Since 2012 more than 100 historic biodiversity datasets created by or in close collaboration with Belgian marine scientists were identified and recovered. Here, we present the results of the digitization of the scientific papers on the Belgian Antarctic expedition (1897-1899) under the command of Adrien de Gerlache with the famous research vessel Belgica. During this two-year expedition more than 1,200 animal species and 500 plants were sampled and the results were published between 1901 and 1949 entitled '*Expédition antarctique belge. Résultats du voyage du S.Y. Belgica en 1897-1898-1899 sous le commandement de A. de Gerlache de Gomery*'. This dataset includes 2,082 records for 235 sampling stations in the Antarctic region. Data were digitized from 31 original expedition reports including 29 zoological and 2 botanical reports. Taxa belonged to 16 different phyla. The Arthropoda were the most abundant with 26.3% of observations (160 species), followed by the Ochrophyta (15.7%, 240 diatom species) and the Bryozoa (14.5%, 95 species). Most chordates belonged to the seals, penguins and other bird species. Within the phylum Arthropoda no less than 47 unique species were identified as insects (which is quite remarkable because researchers did not expect to find them in the cold climate of Antarctica). Also, during this expedition the Antarctic midge, *Belgica Antarctica*, was discovered making it the largest endemic insect of the continent. Six orders of insects were discovered of which the beetle species (Coleoptera) were most represented.

All these data are now assigned with a Digital Object Identifier (DOI) and are made available (open access) to the scientific community through the Integrated Marine Information System (IMIS) in 1 easy-to-access dataset.

Visit <http://www.lifewatch.be/en/marine-data-archeology> to check out more results.

Keywords: data archeology; historical datasets; marine; biodiversity; Belgica; Antarctic; expedition